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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,896	03/03/2005	Shmuel Roth	P-4785-US	8877

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EXAMINER	
CRAWFORD, JACINTA M	
ART UNIT	**PAPER NUMBER**
2628	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,896	ROTH ET AL.	
	Examiner	Art Unit	
	JACINTA CRAWFORD	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 May 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *05/27/2010*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on May 14, 2010 has been entered.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on May 27, 2010 was filed after the mailing date of the Request for Consideration Examination amendment filed on May 14, 2010. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-4, 6-10, 12, 13, 15, 16, 18-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karakawa (US 6,304,237) in view of Lind (US 6,069,601) and Bianchi et al. (US 5,744,795).

As to claim 1, Karakawa teaches a light source to generate light of a set of at least three different chromaticities by explaining the invention comprises a monochromatic red (R), green (G), blue (B) pulsed laser light source adapted for display applications, and particularly, LCD display systems. (Col 1, 59-61) Karakawa further teaches a controller to produce a light pattern corresponding to an image by selectively controlling the path of the light of said at least three primary colors by showing the schematic diagram of the monochromatic R, G, B laser light source coupled with three transmissive LCD panels as the spatial light modulators is shown in FIG. 3. Since LCD panels are totally insensitive to the pulse width modulation, this monochromatic R,G,B laser light source can be coupled with both transmissive and reflective LCD panels acting as spatial light modulators. (Col 5 lines 32-38, Fig. 3) Since the utilization of a spatial light modulator is well known in the art as an example of a controller to determine the relative location of light of each color as projected onto the view screen, Karakawa teaches the

operation of a controller as a means of projecting the projection lens contents onto the viewing screen (Fig 3).

However, Karakawa fails to explicitly teach a proofed image, a converter to receive said proofed image in a print color format and to convert said proofed image from said print color format to a display color format, said chromaticities are selected to define a viewed color gamut which covers said perceived color gamut of said set of inks when printed on said substrate, and a controller to receive said proofed image in said display color format.

This is what Lind teaches. (Col 2 lines 34-55, Col 3 line 45-Col 4 line 11, Col 5 lines 10-17) It should be noted that Lind teaches soft proofing an image to be reproduced using a set of selected printing colorants (cyan, magenta and yellow) wherein the display appearance is substantially spectrally matched to the set of printing colorants. (Col 2 lines 34-55, Col 3 line 45-Col 4 line 11)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings a viewed color gamut which covers a perceived color gamut of said inks when printed on a substrate as taught by Lind into the system of Karakawa in order to reproduce a proofed image because providing a better match to a printed reproduction than prior systems and methods can be achieved. (Col 2 lines 56-58)

Further, it should be noted that Lind does not explicitly teach said defined viewed color gamut which entirely covers a perceived color gamut of said set of inks when printed on said substrate. Nonetheless it should be noted that a purpose of the invention that Lind teaches is to select printing colorants (viewed color gamut) wherein the display appearance is substantially spectrally matched to a set of printing colorants (perceived color gamut). (Col 3 lines 56-65)

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the colorants of Lind to entirely cover a perceived color gamut because covering the entire perceived gamut facilitates in providing even more correctness in producing a display appearance as close as possible to a printed document.

Further, Bianchi et al. disclose a converter to receive said proofed image in a print color format and to convert an image from said print color format to a display color format (Figure 3, A/D converter, 120, column 4, lines 1-10 notes receiving an analog signal from the scanned document and converting to a digital signal to be used to produce output for display), and a controller to receive said image in said display color format (Figure 3, 130 notes receiving digital signal for further processing to produce the output).

It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Karakawa modified with Lind's system with Bianchi et al.'s A/D converter in order to appropriately change the format of the signal according to the device that the signal is being output.

As to claim 2, Karakawa does not explicitly teach a correction filter. This is what Lind teaches. (Col 3, line 45- Col 4 line 11 and Fig. 3) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of a correction filter as taught by Lind into the system of Karakawa utilizing a viewed color gamut similar to perceived color gamut when printed as taught by Edge in order to employ said correction filter based on spectrum reflected from substrate because the correction filter of Lind provides the functionality of selecting particular colors based on particular ink and paper to be used in the printing process (Col 3, lines 55-61 and Fig. 3) including possible selection of cyan, magenta, yellow pixel elements to produce a resultant secondary color. (Col 4, lines 9-11)

As to claim 3, Lind teaches a correction filter being based on the spectrum of an intended light used to view the proofed image when printed on the substrate. (Col 3, lines 55-61 and Fig. 3) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of a correction filter as taught by Lind into the system of Karakawa utilizing a viewed color gamut similar to perceived color gamut when printed as taught by Edge in order to employ said correction filter based on spectrum of an intended light used to view the proofed image when printed on the substrate because the correction filter of Lind provides the functionality of selecting particular colors based on particular ink and paper to be used in the printing process (Col 3, lines 55-61 and Fig. 3) including possible selection of cyan, magenta, yellow pixel elements to produce a resultant secondary color. (Col 4, lines 9-11)

As to claim 4, Karakawa teaches the light source of the display includes at least a plurality of light emitting diodes by showing the monochromatic R, G, B laser light source incorporates cw diode laser bar (Col 3, lines 16-17) and referring to Fig. 1, the master oscillator is coupled through output coupler to multiple Nd:YVO.sub.4 based gain modules (e.g., power amplifiers), and the average output power increases as more gain modules are added to the master oscillator. Each gain module is constructed from Nd:YVO.sub.4 crystal slab transversely pumped by one or two cw diode laser bars. (Col 3, lines 43-49).

As to claim 6, Karakawa teaches at least three primary colors comprise at least four primary colors by explaining the performance goals of the monochromatic R,G,B laser light source are usually defined by the requirement for pulse repetition rate and FWHM (full-width half-max) pulse width, as well as producing high luminosity, well color-balanced white light when R,G,B laser light are mixed together. (Col 3, lines 11- 15) Since the definition of white light is well known in the art as containing all the colors of the visible spectrum, the display taught by Karakawa teaches at least three primary colors comprising at least four primary colors.

As to claim 7, Karakawa teaches wherein the light source produces light of three primary colors, the transmission spectra of which define said viewed color gamut by showing the invention presents a monochromatic R, G, B light source which incorporates digital color space conversion electronics which transfer input video signal color space into R, G, B color space created by the monochromatic R, G, B light source, so that the resulting color spectrum is acceptable for display use. (Col 2, lines 38-42).

As to claim 8, Karakawa teaches a spatial light modulator by demonstrating the invention includes display systems employing the monochromatic, pulsed laser light source, particularly for LCD display systems, since LCD panel (one of spatial light modulators) does not require pulse width modulation, the R, G, B pulsed laser light source may be coupled to three LCD panels (one panel for each primary color) to create a display system. (Col 2, lines 26-32)

As to claim 9, Karakawa teaches a digital micro-mirror device by showing although the specific example of three transmissive LCD panels with the monochromatic R, G, B laser light source has been discussed in detail, the invention can be coupled with other different types of spatial light modulators; such as, but not limited to: digital mirror device (DMD), two dimensional electro-mechanical, digital, mirror array device modulators, as manufactured by Texas Instruments; (Col 6, lines 43-47 and Co16 lines 54-56).

As to claim 10, Karakawa teaches selectively producing light of said at least three colors having at least three different chromaticities by showing the invention comprises a monochromatic red (R), green (G), blue (B) pulsed laser light source adapted for display applications, and particularly, LCD display systems. (Col 1, 59-61) Karakawa additionally teaches combining the light of at least said three primary colors to substantially reproduce said image by showing the schematic diagram of the monochromatic R, G, B laser light source coupled with three transmissive LCD panels as the spatial light modulators is shown in FIG. 3. Since LCD panels are totally insensitive to the pulse width modulation, this monochromatic R,G,B laser light

source can be coupled with both transmissive and reflective LCD panels acting as spatial light modulators. (Col 5 lines 32-38) Since the utilization of a spatial light modulator is well known in the art as an example of a controller to determine the relative location of light of each color as projected onto the view screen, Karakawa teaches the operation of a controller as a means of projecting the projection lens contents onto the viewing screen (Fig 3). However, Karakawa fails to explicitly teach a proofed image, receiving said proofed image in a print color format; converting said proofed image from said print color format to a display color format corresponding to said at least three colors, and said chromaticities are selected to define a viewed color gamut which covers said perceived color gamut of said set of inks when printed on said substrate. This is what Lind teaches. (Col 2 lines 34-55, Col 3 line 45-Col 4 line 11, Col 5 lines 10-17) It should be noted that Lind teaches soft proofing an image to be reproduced using a set of selected printing colorants (cyan, magenta and yellow) wherein the display appearance is substantially spectrally matched to the set of printing colorants. (Col 2 lines 34-55, Col 3 line 45-Col 4 line 11) It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings a viewed color gamut which covers a perceived color gamut of said inks when printed on a substrate as taught by Lind into the system of Karakawa in order to reproduce a proofed image because providing a better match to a printed reproduction than prior systems and methods can be achieved. (Col 2 lines 56-58) Further, it should be noted that Lind does not explicitly teach said defined viewed color gamut which <u>entirely</u> covers a perceived color gamut of said set of inks when printed on said substrate. Nonetheless it should be noted that a purpose of the invention that Lind teaches is to select printing colorants (viewed color gamut) wherein the display appearance is substantially

spectrally matched to a set of printing colorants (perceived color gamut). (Col 3 lines 56-65) Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the colorants of Lind to entirely cover a perceived color gamut because covering the entire perceived gamut facilitates in providing even more correctness in producing a display appearance as close as possible to a printed document.

Further, Bianchi et al. disclose receiving said proofed image in a print color format; converting said proofed image from said print color format to a display color format corresponding to said at least three colors (Figure 3, A/D converter, 120, column 4, lines 1-10 notes receiving an analog signal from the scanned document and converting to a digital signal to be used to produce output for display).

It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Karakawa modified with Lind's system with Bianchi et al.'s A/D converter in order to appropriately change the format of the signal according to the device that the signal is being output.

Claim 12 is similar in scope to claim 2 and thus, rejected under similar rationale.

Claim 13 is similar in scope to claim 3 and thus, rejected under similar rationale.

As to claim 15, Karakawa further teaches wherein said at least three primary colors include a red primary, a green primary and a blue primary, the transmission spectra of which define said viewed color gamut by showing the invention presents a monochromatic R, G, B light source which incorporates digital color space conversion electronics which transfer input video signal color space into R, G, B color space created by the monochromatic R, G, B light source, so that the resulting color spectrum is acceptable for display use. (Col 2, lines 38-42)

As to claim 16, Karakawa teaches the method comprising spatially modulating the light of said at least three primary colors by explaining the invention includes display systems employing the monochromatic, pulsed laser light source, particularly for LCD display systems, since LCD panel (one of spatial light modulators) does not require pulse width modulation, the R, G, B pulsed laser light source may be coupled to three LCD panels (one panel for each primary color) to create a display system. (Col 2, lines 26-32)

As to claim 18, Karakawa teaches said controller controls path of light of said at least three primary colors based on image data (input video signal) in terms of said at least three primary colors. (Col 5 lines 32-38, Fig. 3) However, Karakawa fails to explicitly teach a proofed image. This is what Edge teaches. (p. 1 paragraph 9, p. 1- 2 paragraph 12, p. 3 paragraph 2 Figs. 1-2) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of a proofed image as taught by Edge into the system of Karakawa in order to control path of light of said at least three primary colors based on image data representing proofed image because soft proofing can remove the need to print copies of

media during proofing process and allow multiple proofing specialists to proof color images from remote locations simply by looking at display devices, rather than awaiting delivery of hardcopies. (p. 1 paragraph 6)

As to claim 19, Karakawa teaches said light source generates the light of said at least three colors independently of said proofed image. (Col 5 lines 32-38, Fig. 3)

As to claim 20, Karakawa teaches wherein producing light of said at least three colors comprises selectively producing light of said at least three colors independent of proofed image. (Col 5 lines 32-38, Fig. 3)

Claims 21 and 22 are similar in scope to claims 1 and 10 except for the recitation of generating light of exactly three colors having three different chromaticities. Lind also teaches this. (Col 2 lines 34-55, Col 3 line 45-Col 4 line 11, Col 5 lines 10-17) It should be noted that Lind teaches select colorants being cyan, magenta and yellow. (Col 5 lines 10-17) Motivation to combine a proofed image and said chromaticities are selected to define a viewed color gamut which covers said perceived color gamut of said set of inks when printed on said substrate of Lind into the system of Karakawa is given in claims 1 and 10.

As to claims 23 and 26, Bianchi et al. teaches said print color format is an analog format (column 4, lines 1 and 2).

As to claims 24 and 27, Bianchi et al. teaches said display color format is a digital format and wherein said converter is to convert said proofed image from said analog print color format to said digital color format (Figure 3, A/D converter, 120, column 4, lines 1-10 notes receiving an analog signal from the scanned document and converting to a digital signal to be used to produce output for display).

As to claims 25 and 28, Karakawa teaches wherein said converter is to determine a combination of light of said at least three different primary colors, thereby to accurately represent the proofed image using said at least three light source colors (column 6, lines 11-36).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karakawa (US 6,304,237) in view of Lind (US 6,069,601) and Bianchi et al. (US 5,744,795) as applied to claim 1 above, and further in view of Wada (US 6,972,736).

As to claim 5, neither Karakawa nor Lind nor Bianchi et al. explicitly teaches a polychromatic source to generate polychromatic light and a color filtering mechanism to sequentially generate the light of said at least three colors by filtering said polychromatic light. This is what Wada teaches. (Col 5 line 50 thru Col 6 line 8, Col 15 lines 1-26, Col 16 lines 33-59, Fig. 1 and Fig. 11) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings of a polychromatic light source with sequentially filtering into the system of Karakawa utilizing a viewed color gamut similar to perceived color gamut

when printed as taught by Lind in Order to generate light of at least three colors because white light emitted from a light source generating color lights sequentially via a timing generator (Col 5 line 50 thru Col 6 line 8) provides a color display device of a time-division driving system, in which there occurs no perception of a color breakup caused by an action performed by a presenter, as well as the perception of a color breakup cause by eye movement. (Col 3 lines 18-25)

6. Claims 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karakawa (US 6,304,237) in view of Lind (US 6,069,601) and Bianchi et al. (US 5,744,795) as applied to claims 5 and 10 above, and further in view of Baba (US 2002/0122019).

As to claim 14, neither Karakawa nor Lind nor Bianchi et al. explicitly teaches passing light through a color wheel. This is what Baba teaches. (p. 1 paragraph 8, p.15 paragraph 214 and Fig. 21) It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings a color wheel of Baba into the system of Karakawa utilizing a viewed color gamut similar to perceived color gamut when printed as taught by Lind in order to produce light of said at least three primary colors because a color wheel enables a plurality of color filters to be linked on a single module, thus saving on cost.

As to claim 17, neither Karakawa nor Lind nor Bianchi et al. explicitly teaches color filtering mechanism is adapted to sequentially place at least three color filters corresponding to said at

least three primary colors in path of said polychromatic light. This is what Baba teaches. (p. 1 paragraph 8, p.15 paragraph 214 and Fig. 21) It should be noted that the color wheel as taught by Baba is divided into regions provided with filters for allowing of transmitted light to be R, G, B, W C, M and Y. (Col 8, paragraph 118). It would have been obvious to one of ordinary skill in the art at the present time the invention was made to combine the teachings a color wheel of Baba into the system of Karakawa utilizing a viewed color gamut similar to perceived color gamut when printed as taught by Lind in order to sequentially place at least three color filters corresponding to said at least three primary colors in path of said polychromatic light because a color wheel enables a plurality of color filters to be linked on a single module, thus saving on cost.

Response to Arguments

7. Applicant's arguments filed May 14, 2010 have been fully considered but they are not persuasive. Applicants make similar arguments regarding claims 1-4, 6-13, 15, 16, 18-22 as filed in the appeal brief dated August 20, 2007 on pages 8-10 of the amendment filed where the combination of Karakawa and Lind would result in being inoperable. Applicant argues that Lind teaches a <u>subtractive</u> color display system (i.e. filtered by a set of three colored layers of cyan, magenta and yellow) while Karakawa teaches an <u>additive</u> display unrelated to print proofing (i.e. display designed especially for monochromatic red, blue and green pulsed laser light source). Applicant further argues that since the types of technology for each reference are intended to solve different problems (Karakawa teaches an RGB color display system while Lind teaches a

CMYK color display system to spectrally match colors of printing colorants) and thus, it would not be obvious to take the system of Lind and use an additive combination of colors because the colors chosen by Lind would render the device of Karakawa inoperable and thus, the combination teaches away with respect to each other. However, Examiner respectfully disagrees. It should be noted that applicant appears to misconstrue the teachings of Lind to be limited only a subtractive system and thus, the colors of the filter layers in Lind must be chosen to spectrally match only cyan, magenta and yellow. Lind explicitly states "if desired the pigmented layers may have spectral characteristics matched to non-process colors, such as red, green and blue, or any other color..." (Col 4 lines 6-11) In other words, the Lind reference does not absolutely exclude the possibility of RGB color display system and therefore, is not limited to only a subtractive color system by suggesting that it is possible to substantially spectrally match additive colors such as red, green and blue to perform soft proofing. Therefore, the system of Lind does not render Karakawa inoperable and thus, Lind does not teach away from the teachings of Karakawa. In addition, applicant argues that "while not stated in so many words" claim 1 recites an additive color system. Examiner respectfully disagrees with claim 1 necessitating an additive color system. It should be noted claim 1 merely requires "a light source generating light of a set of at least three colors having at least three different chromaticities..." Nowhere in the said claim does it require that these said chromaticities must be chromaticities of an additive color system nor does claim 1 explicitly recite said chromaticities must be red, green and blue. Furthermore applicant has argued that Lind does not define a viewed color gamut which entirely covers a perceived color gamut. As noted in the previous final office action, examiner notes that a purpose of the invention of Lind is to select printing colorants (viewed

color gamut) wherein the display appearance is substantially spectrally matched to a set of printing colorants (perceived color gamut). (Col 3 lines 56-65) Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to select the colorants of Lind to entirely cover a perceived color gamut because entirely covering the perceived gamut would facilitate in providing even more correctness in producing a display appearance as close as possible to a printed document than substantially covering the perceived gamut.

8. Applicant's arguments on pages 10 and 11 with respect to newly amended independent claims 1 and 10 and newly added claims 23-28 have been considered but are moot in view of the new ground(s) of rejection. However, Bianchi et al. (US 5,744,795) is used in combination with Karakawa and Lind to teach the limitations as recited.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACINTA CRAWFORD whose telephone number is (571)270-1539. The examiner can normally be reached on M-F 8:00a.m. - 5:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jacinta Crawford/
Examiner, Art Unit 2628

/Kee M Tung/
Supervisory Patent Examiner, Art Unit 2628